Listing of Claims:

Claim 1 (Currently Amended): A process for desulfurization of a gasoline feedstock obtained from a fluidized-bed catalytic cracking (FCC) operation comprising at least the following stages:

a) a selective hydrogenation of diolefins present in said initial hydrocarbon feedstock in the presence of a catalyst comprising a metal of group VIII of the periodic table, in the presence of an amount of hydrogen that slightly exceeds the stoichiometric value necessary for hydrogenating all of said diolefins, said selective hydrogenation being conducted under sufficient pressure to keep more than 80% of the gasoline feedstock in the liquid phase,

b) an extraction by a suitable solvent of resultant hydrogenated fraction under conditions so as to obtain at least two fractions:

- a raffinate comprising for the most part olefins, paraffins and naphthenes and a reduced amount of sulfur-containing compounds that are contained in the initial feedstock,
- a fraction that contains said solvent and the majority of aromatic hydrocarbons and the majority of the sulfur-containing compounds contained in the initial feedstock.

Claim 2 (Previously Presented): A process according to claim 1, in which the molar ratio between the hydrogen and the diolefins in stage a) is between 1 and 10.

Claim 3 (Previously Presented): A process according to claim 1, in which said group VIII catalyst comprises at least one metal selected from the group that consists of platinum, palladium, and nickel.

Claim 4 (Previously Presented): A process according to claim 3, in which said catalyst also comprises at least one metal of group VIB of the periodic table, thereby providing a bimetallic catalyst.

Claim 5 (Previously Presented): A process according to claim 1, further comprising distilling said fraction containing solvent, aromatics and sulfur-containing compounds so as to obtain regenerated solvent which is recycled to the extraction step and a bottom stream rich in sulfur-containing compounds and aromatics, and subjecting said bottoms stream to hydrodesulfurization to recover a gasoline low in sulfur and rich in aromatics.

Claim 6 (Previously Presented): A process according to claim 1, in which said selective hydrogenation conducted under a pressure of about 0.4 to 5 MPa, at a temperature of between about 50 and 300°C, with an hourly volumetric flow rate of the feedstock of between about 1 h^{-1} and 12 h^{-1}.

Claim 7 (Previously Presented): A process according to claim 1, in which said extraction is with a solvent is at least one of an extractive distillation and a liquid-liquid extraction.

Claim 8 (Previously Presented): A process according to claim 1, in which said solvent is a compound or a mixture of compounds selected from the group that consists of the following compounds: sulfolane, 3-methylsulfolane, 2,4-dimethylsulfolane, 3-methylsulfolane, 3-ethylsulfolane, N-methyl pyrrolidone, 2-pyrrolidone, N-ethyl-pyrrolidone, N-propyl-pyrrolidone, N-formyl-morpholine, dimethylsulfone, diethylsulfone, methylethylsulfone, dipropylsulfone, dibutylsulfone, tetraethylene glycol, triethylene glycol, dimethylene glycol, ethylene glycol, ethylene carbonate, and propylene carbonate.

Claim 9 (Cancelled)

Claim 10 (Previously Presented): A process according to claim 1, wherein the hydrocarbon feedstock is a gasoline with a upper boiling point of less than 220°C.

Claim 11 (Cancelled)

Claim 12 (Previously Presented): A process according to claim 7, wherein the extraction is conducted by extractive distillation, the hydrocarbon feedstock is an FCC gasoline and the solvent comprises at least one of sulfolane, 3-methylsulfolane, N-formyl morpholine, 2-pyrrolidone, dipropylsulfone and tetraethylene glycol.

Claim 13 (Cancelled)

Claim 14 (Previously Presented): A process according to claim 12, further comprising distilling said fraction containing solvent, aromatics and sulfur-containing compounds so as to obtain regenerated solvent which is recycled to the extraction step and a bottom stream rich in sulfur-containing compounds and aromatics, and subjecting said bottoms stream to hydrodesulfurization to recover a gasoline low in sulfur and rich in aromatics.

Claim 15 (Previously Presented): A process according to claim 1, in which the molar ratio between the hydrogen and the diolefins in stage a) is between 1.2 and 5.

Claim 16 (Previously Presented): A process according to claim 5, wherein the bottoms stream comprises 60-90% by weight of aromatics.

Claim 17 (Previously Presented): A process according to claim 1, wherein said catalyst consists essentially of a nickel-containing catalyst.

Claim 18 (Previously Presented): A process according to claim 16, wherein said catalyst consists essentially of a nickel-containing catalyst.

Claim 19 (Previously Presented): A process according to claim 1, wherein said extraction in step (b) of claim 1 is conducted by extractive distillation.

Claim 20 (Previously Presented): A process according to claim 16, wherein the extraction in step (b) is conducted by extractive distillation and the solvent comprises at least one of sulfolane, 3-methylsulfolane, N-formyl morpholine, 2-pyrrolidone, dipropylsulfone and tetraethylene glycol.

Claim 21 (Previously Presented): A process according to claim 20, wherein the solvent is sulfolane.

Claim 22 (Previously Presented): A process according to claim 1, wherein the resultant hydrogenated fraction from step (a) is passed directly into the extraction stage (b).

Claim 23 (Previously Presented): A process according to claim 1, wherein the FCC gasoline feedstock is passed directly into the hydrogenation stage.

Claim 24 (New): A process according to claim 1, wherein the selective hydrogenation is conducted under sufficient pressure to maintain more than 95% by weight of the gasoline feedstock in the liquid phase.